What is claimed:

1. A method for routing data packets from a subscriber device, over a broadband access link, through a first Internet protocol (IP) version 6 (IPv6) network to a second IP network, the first and second IP networks interfacing through a second IP network edge device, the method comprising:

providing a first IP address to the subscriber device, the first IP address associated with the first IP network;

providing a second IP address to the subscriber device based on a request routed through the first IP network from the subscriber device, the second IP address being associated with the second IP network; and

addressing data packets from the subscriber's device with the first IP address and the second IP address.

2. The method for routing data packets according to claim 1, in which the request comprises a dynamic host configuration protocol (DHCP) request.

3. The method for routing data packets according to claim 2, in which the subscriber device comprises an IP version 4 (IPv4) device, the method further comprising:

encapsulating the DHCP request in an IPv6 packet for routing the DHCP request through the first IP network.

4. The method for routing data packets according to claim 2, in which the subscriber device comprises an IPv6 device, the method further comprising:

modifying the DHCP request to include a two-hop IPv6 routing header for routing the DHCP request through the first IP network.

5. The method for routing data packets according to claim 4, in which the two-hop IPv6 routing header comprises an IP address of the edge device as a first hop

address and an IP broadcast address of the DHCP request as a second hop address, the IP address of the edge device being associated with the first IP network.

6. The method for routing data packets according to claim 5, in which providing the second IP address to the subscriber device is further based on a DHCP response routed through the first IP network from the edge device to the subscriber device, the method further comprising:

modifying the DHCP response to include a two-hop IPv6 routing header for routing the DHCP response through the first IP network to the subscriber device.

7. The method for routing data packets according to claim 6, in which the two-hop IPv6 routing header of the DHCP response comprises the first IP address of the subscriber device as a first hop address and the second IP address of the subscriber devices as a second hop address.

8. A method for addressing data packets of a subscriber for transmission from an originating device over a broadband access link through an Internet protocol (IP) network to a destination network, the method comprising:

allocating a first subscriber IP address to the originating device, the first subscriber IP address being associated with the IP network;

receiving a dynamic host configuration protocol (DHCP) request from the originating device, the DHCP request being associated with the first subscriber IP address;

sending the DHCP request through the IP network to a destination device in the destination network using an IP network address of the destination device, the destination device forwarding the DHCP request to a DHCP server;

receiving a DHCP response from the DHCP server, through the destination device, the DHCP response including a second subscriber IP address from the DHCP

server, the second subscriber IP address being associated with the destination network; and

sending the DHCP response through the IP network to the originating device using the first subscriber IP address, enabling the originating device to obtain the second subscriber IP address from the DHCP response and address subsequent data packets using the first subscriber IP address and the second subscriber IP address.

9. The method for addressing data packets according to claim 8, in which the IP network comprises an IP-version 6 (IPv6) network, and in which the first subscriber IP address and the IP network address of the destination device comprise IPv6 addresses.

10. The method for addressing data packets according to claim 9, in which the originating device comprises an IP-version 4 (IPv4) device, the DHCP request comprises a DHCPv4 request, the DHCP response comprises a DHCPv4 response and the second subscriber IP address comprises an IPv4 address.

11. The method for addressing data packets according to claim 10, in which sending the DHCP request through the IP network comprises:

encapsulating the DHCPv4 request in a first IPv6 packet, including the IPv6 network address of the destination device as a first destination address, and sending the first IPv6 packet to the destination device using the first destination address, the destination device extracting the DHCPv4 request from the first IPv6 packet prior to forwarding the DHCPv4 request to the DHCP server.

12. The method for addressing data according to claim 11, in which sending the DHCP response through the IP network comprises:

encapsulating the DHCPv4 response in a second IPv6 packet, including the first subscriber IPv6 address as a second destination address, and sending the second IPv6 packet to the originating device using the second destination address, the

originating device extracting the DHCPv4 response from the second IPv6 packet to obtain the second subscriber IPv4 address.

13. The method for addressing data packets according to claim 9, in which the originating device comprises an IPv6 device, the DHCP request comprises a DHCPv6 request, the DHCP response comprises a DHCPv6 response and the second subscriber IP address comprises an IPv6 address.

14. The method for addressing data packets according to claim 13, in which sending the DHCP request through the IP network comprises:

modifying the DHCPv6 request to include a two-hop IPv6 routing header, comprising the IPv6 network address of the destination device as a first hop address and an IPv6 broadcast address of the DHCPv6 request as the second hop address, and sending the DHCPv6 request to the destination device using the first hop address.

15. The method for addressing data according to claim 14, in which sending the DHCP response through the IP network comprises:

modifying the DHCPv6 response to include a two-hop IPv6 routing header, comprising the first subscriber IPv6 address as a first hop address and the second subscriber IPv6 address of the DHCPv6 request as the second hop address, and sending the DHCPv6 response to the destination device using the first hop address.

16. The method for addressing data according to claim 8, in which allocating the first subscriber IP address comprises matching a previously allocated network IPv6 address of the subscriber.

17. The method for addressing data according to claim 8, in which allocating the first subscriber IP address comprises receiving an initial DHCP request at a DHCP server associated with the IP network, and sending an initial DHCP response to the originating device from the IP network DHCP server, the initial DHCP response including the first subscriber IP address.

18. A system for addressing data packets of a subscriber for transmission over a broadband access link from an originating device through a first Internet protocol (IP) network to a second IP network, the first IP network and the second IP network interfacing through at least one edge device of the second IP network, the system comprising:

a first dynamic host configuration protocol (DHCP) server in the first IP network that allocates a first subscriber IP address to the originating device, the first subscriber IP address being associated with the first IP network; and

a second DHCP server in the second IP network that receives a DHCP request from the originating device through the at least one edge device, allocates a second subscriber IP address to the originating device, and sends a DHCP response having the second subscriber IP address through the at least one edge device to the originating device, the second subscriber IP address being associated with the second IP network;

wherein the originating device addresses data packets using the first subscriber IP address and the second subscriber IP address.

19. The system for addressing data packets according to claim 18, in which the first IP network comprises an IP-version 6 (IPv6) network and the first subscriber IP address comprises an IPv6 address.

20. The system for addressing data packets according to claim 19, in which the originating device comprises an IP-version 4 (IPv4) device, the second DHCP server comprises a DHCPv4 server, the DHCP request comprises a DHCPv4 request, the DHCP response comprises a DHCPv4 response and the second subscriber IP address comprises an IPv4 address.

21. The system for addressing data packets according to claim 20, in which the DHCP request from the origination device is encapsulated in a first IPv6 packet,

received by the at least one edge device based on an IPv6 address of the at least one edge device included in the first IPv6 packet, the at least one edge device extracting the DHCP request from the first IPv6 packet prior to forwarding the DHCP request to the second DHCP server.

22. The system for addressing data packets according to claim 21, in which the DHCP response from the second DHCP server is encapsulated in a second IPv6 packet, received by the originating device based on the first subscriber IP address included in the second IPv6 packet, the originating device extracting the DHCP response from the second IPv6 packet to obtain the second subscriber IP address.

23. The system for addressing data packets according to claim 19, in which the originating device comprises an IPv6 device, the second DHCP server comprises a DHCPv6 server, the DHCP request comprises a DHCPv6 request, the DHCP response comprises a DHCPv6 response and the second subscriber IP address comprises an IPv6 address.

24. The system for addressing data packets according to claim 23, in which the DHCPv6 request from the origination device is modified to include a two-hop IPv6 routing header, comprising an IPv6 network address of the at least one edge device as a first hop address and an IPv6 broadcast address of the DHCPv6 request as a second hop address, the at least one edge device receiving the DHCPv6 request based on the first hop address.

25. The system for addressing data packets according to claim 24, in which the DHCPv6 response from the second DHCP server is modified to include a two-hop IPv6 routing header, comprising the first subscriber IPv6 address as a first hop address and the second subscriber IPv6 address as a second hop address, the at least one edge device directing the DHCPv6 response to the originating device using the first hop address.

26. The system for addressing data packets according to claim 18, in which the second IP network comprises one of an Internet service provider network and a private network.